REMARKS

Status Of Claims

Claims 52 to 54, 71 to 86, and 115 to 119 have been canceled without prejudice or disclaimer. Applicant reserves the right to pursue those claims in a continuing application.

Applicant proposes to amend claim 60 to include certain language from prior claim 62. Applicant proposes to amend claim 62 to delete language that applicants propose to add to claim 60. Applicant proposes to add new claim 130, which includes language previously optionally included in claim 52. Applicant proposes to amend claim 55 to depend from claim 62 rather than canceled claim 54. Applicant proposes to amend claim 57 to depend from claim 62 rather than canceled claim 52. Applicant proposes to amend claim 61 to change plural terms to singular terms. Applicant proposes to amend claims 120 to 129 to include language of the claims from which they previously depended.[1] The attached Appendix shows the changes to the proposed amended claims.

The proposed amendments do not raise any new issues or present any new matter. Thus, applicants respectfully request entry of the amendments. After entry of the amendments, claims 55 to 70 and 120 to 130 will be pending and under consideration.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

[1] Claims 120 to 123 had previously depended from claim 52, and claims 128 and 129 had previously depended from claim 71. The language "and optionally, a ligation agent" in prior claims 52 and 71 was not included in proposed amended claims 120 to 123, 128, and 129.

Rejection In View of Barany PCT

The Examiner rejected claims 52 to 64, 69 to 80, 85, 86, and 115 to 117 under 35 U.S.C. § 102(b) as allegedly being anticipated by WO 97/31256 (Barany PCT). *See* September Final Action at page 3. The Examiner cites various text of Barany PCT as allegedly showing various aspects of certain claims. *See id.* at pages 3 to 5. The statement of the bases for the rejection at pages 2 to 5 of the Final Action appears to be essentially unchanged from the bases set forth in the Office Action that was mailed December 14, 2001 (Paper No. 7). The Examiner discusses certain of applicant's prior arguments at pages 11 to 13 of the September Final Action. Applicant respectfully traverses the rejection.

At the outset, applicant notes that claims 52 to 54, 71 to 86, and 115 to 119 have been canceled without prejudice or disclaimer. Also, applicant has proposed amending claim 60, which is the only remaining independent claim that is rejected under § 102(b) in view of Barany PCT. Specifically, applicant proposes amending claim 60 to include certain primer set language that had previously been recited in claim 62.

All other remaining claims rejected in view of Barany PCT now ultimately depend from claim 60. Accordingly, after entry of the amendments, all of claims 55 to 64, 69, 70, and 130 will include both at least one probe set and a primer set.

Applicant respectfully asserts that the Examiner has not established that Barany PCT anticipates any of the rejected claims. The only mention of a primer in the September Final Action is the Examiner's contention that the "capture probes can inherently also function as primers for amplification . . . ." See September Final Action at page 4, second paragraph.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Claim 60 (and prior claim 62) recite "a primer set, the primer set comprising (i) at least one primer comprising the sequence of the 5' primer specific portion of the first probe, and (ii) at least one primer complementary to the 3' primer-specific portion of the second probe." The Examiner fails to explain how the capture probes of Barany PCT could inherently serve as both (i) at least one primer comprising the sequence of the 5' primer specific portion of the first probe, and (ii) at least one primer complementary to the 3' primer-specific portion of the second probe. In fact, the Examiner fails to point out any teaching in Barany PCT of a capture probe that has a sequence that comprises a sequence of one of the probes used in the ligation. Thus, the Examiner fails to establish that Barany PCT shows or suggests amended claim 60 for at least this reason.

For at least these reasons, the Examiner has failed to establish that Barany PCT would have shown or suggested claim 60, and all claims dependent from that claim. Thus, applicant need not address the Examiner's contentions concerning other limitations of those claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the § 102 rejection of certain claims in view of Barany PCT.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Rejection In View of Barany US

The Examiner rejected claims 52 to 63, 69 to 79, 85, 86, 115 to 117, and 120 to 129 under 35 U.S.C. § 102(a) and (e) as allegedly being anticipated by US Patent No. 6,027,889 (Barany US). *See* September Final Action at page 5. The Examiner cites various text of Barany US as allegedly showing various aspects of certain claims. *See id.* at pages 5 to 6. Applicant respectfully traverses the rejection.

The statement of the bases for the rejection at pages 5 to 7 of the September Final Action appears to be essentially unchanged from the bases set forth in Paper No. 7. The Examiner discusses certain of applicant's prior arguments at pages 11 to 13 of the September Final Action.

Applicant asserted in the Amendment submitted March 14, 2002 ("March 2002 Amendment"), that the Examiner failed to establish that Barany US taught a probe set that included at least one probe that includes an addressable portion between a primer-specific portion and a target-specific portion. The Examiner contends that each of a first and second probe of a probe set of Barany US includes a target specific portion, an addressable array portion, and a region that functions as a primer specific portion. *See* September Final Action at page 5. The Examiner cites column 23, lines 20 to 33, and column 26, line 37, to column 27, line 19, for that alleged teaching. *See id.*

The cited section of Barany US fails to support the Examiner's position. First, column 23, lines 20 to 33, make no mention of an addressable array portion. Second, column 26, line 37, to column 27, line 19, discusses adding an addressable nucleotide that is included in a ***PCR primer***. That section of Barany makes no mention of a probe that is suitable for ligation that includes an addressable array portion.

The Examiner fails to establish that Barany US teaches: (i) at least one probe set that comprises at least one first ligation probe and at least one second ligation

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

probe, wherein the probes are suitable for ligation together, and wherein at least one probe comprises a target-specific portion, a primer-specific portion, and an addressable-support specific portion; and (ii) a primer set as presently claimed. Rather, the Examiner has pointed to a discussion of a probe set that is used for ligation, and a primer set that includes an addressable nucleotide sequence.

For at least this reason, the Examiner has failed to establish that Barany would have shown or suggested claim 60 and all claims dependent from that claim. Thus, applicant need not address the Examiner's contentions concerning other limitations of those claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

In addition to the prior bases for the rejection in Paper No. 7, the Examiner asserts that "Barany expressly teaches sets of six probes with identical sequences at the 5' end (see column 51, lines 25-29)." September Final Action at page 7. The Examiner also asserts that "Barany expressly teaches the use of sets of probes (see column 45, tables 6 and 7)." *Id.* The Examiner notes that the citation concerning "use of sets of probes" is directed to claims 120 to 129. *Id.* at page 13.

Applicant repeats and adds to the arguments concerning the rejection of claims 120 to 129, which were presented in the Amendment submitted July 22, 2002. The Examiner failed to address specific arguments concerning claims 120 to 129 in the September Final Action. If this rejection is maintained, applicant requests that the Examiner address these specific arguments.

Claims 120, 122, 124, 126, and 128 recite that the at least one probe set comprises at least two different probe sets for detecting at least two different target sequences. At least one probe in a first probe set comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of a first target sequence, and an

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

addressable support-specific portion that is specific for the first target sequence. At least one probe in a second probe set comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence. The primer-specific portions of the probes have identical sequences.

Thus, the at least two probes comprise identical primer-specific sequences, but comprise (i) different addressable support-specific portions that are specific to the at least two different target sequences and (ii) different target-specific portions that hybridize to the at least two different target sequences. In contrast, the six primers of Barany US that were discussed by the Examiner have only a gene specific 3' region and a 5' region corresponding to one of two sets of universal primers. See Barany US at column 50. The Examiner fails to explain how that portion of Barany US would have taught or suggested at least two different probes that further comprise different addressable support-specific portions that are specific to at least two different target sequences.

Similarly, the primer sets referenced in Tables 6 and 7 of Barany US appear to have only a target-specific sequence and a sequence corresponding to primers. See Barany US at column 40. The Examiner fails to explain how that portion of Barany US would have taught or suggested at least two different probes that further comprise different addressable support-specific portions that are specific to at least two different target sequences.

Thus, for at least this reason, the Examiner has failed to establish that Barany US would have shown or suggested claims 120, 122, 124, 126, and 128. Thus, applicant need not address the Examiner's contentions concerning other limitations of

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

those claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Claims 121, 123, 125, 127, and 129 recite that the at least one probe set comprises at least six different probe sets for detecting at least six different target sequences. At least one probe in each of the six different probe sets comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of one of the at least six different target sequences, and an addressable support-specific portion that is specific for the one of the at least six different target sequences. The primer-specific portions of each of such probes of the at least six different probe sets have identical sequences.

Thus, the at least six different probes comprise identical primer-specific sequences, but comprise (i) different addressable support-specific portions that are specific to the at least six different target sequences and (ii) different target-specific portions that hybridize to the at least six different target sequences. In contrast, the six probes of Barany US that were discussed by the Examiner have only a gene specific 3' region and a 5' region corresponding to one of two sets of universal primers. See Barany US at column 50. The Examiner fails to explain how that portion of Barany US would have taught or suggested at least six different probes that further comprise different addressable support-specific portions that are specific to at least six different target sequences.

Similarly, the primer sets referenced in Tables 6 and 7 of Barany US appear to have only a target-specific sequence and a sequence corresponding to primers. See Barany US at column 40. The Examiner fails to explain how that portion of Barany US would have taught or suggested at least six different probes that further comprise different addressable support-specific portions that are specific to at least six different

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

target sequences. Moreover, Tables 6 and 7 do not refer to at least six different probe sets.

Thus, for at least this reason, the Examiner has failed to establish that Barany US would have shown or suggested claims 121, 123, 125, 127, and 129. Thus, applicant need not address the Examiner's contentions concerning other limitations of those claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the § 102 rejection of certain claims in view of Barany US.

Rejection In View of Barany PCT and Xu

The Examiner also rejected several claims under 35 U.S.C. § 103(a) as allegedly being unpatentable over Barany PCT in view of Xu et al., Tetrahedron Lett., 38(32):5595-5598 (1997) (Xu). *See* September Final Action at page 7. The Examiner cited Barany PCT for the reasons discussed in the prior rejections and stated that Barany PCT did not teach use of tosylated or iodate oligonucleotides for ligation. *See id.* (Certain dependent claims specifically recite that "the 5' thymidine leaving group is tosylate or iodide.") The Examiner contended that Xu discussed tosylated and iodate oligonucleotides for ligation. *See id.* Applicant respectfully traverses.

All of the dependent claims that specifically recite that "the 5' thymidine leaving group is tosylate or iodide" ultimately depend from independent claim 60. Thus, all of those dependent claims include all of limitations of claim 60. Above, applicant explained why the Examiner failed to establish that Barany PCT showed or would have suggested independent claim 60. Xu would have failed to remedy those deficiencies of Barany PCT.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Thus, the Examiner has failed to establish that the combination of Barany PCT and Xu would have rendered obvious any of the rejected claims. Moreover, applicant need not address the Examiner's contentions concerning the combination of Barany PCT and Xu with respect to other limitations of certain dependent claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the § 103 rejections of certain claims in view of Barany PCT and Xu.

Rejection In View of Barany PCT and Boyce-Jacino

The Examiner rejected claims 52 to 64, 69 to 80, 85, 86, 115 to 117, and 120 to 129 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Barany PCT in view of WO 99/66076 (Boyce-Jacino). *See* September Final Action at page 8. The Examiner notes that he cites Boyce-Jacino as allegedly teaching a primer-specific portion to be used with the probe of Barany PCT if the anticipation rejection that relies upon the alleged inherency of such a primer-specific portion is reversed. *See id.*

The Examiner cites various text of Barany PCT as allegedly showing various aspects of certain claims. *See id.* at pages 8 to 10.

The Examiner first contends that Barany PCT discusses a probe set that includes two probes that are suitable for ligation together and that each includes a target specific portion and an addressable array portion. *See id.* at pages 8 to 9. The Examiner further contends that the terminal nucleotides of the addressable array portions of each probe can inherently function as a primer specific portion. *See id.* at page 9.

The Examiner further contends that Boyce-Jacino "teaches embodiments of probes which teaches that the addressable or capture region can be rearranged with the primer to form a primer, capture, target binding arrangement (see pages 13-18)."

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

See id. at page 10. Specifically, the Examiner quotes Boyce-Jacino as follows: "In another preferred embodiment, the capture moiety comprises a specific sequence complementary to a PCR primer or portion thereof, used to amplify a region of the template strand." See *Id.*

The Examiner concludes that it would have been obvious for one skilled in the art "to utilize the rearranged primer as taught by Boyce-Jacino in the method of Barany in order to permit amplification of the template strand within the primer in a nested PCR type reaction." *See id.* The Examiner further contends that an "ordinary practitioner would have been motivated to modify the Barany primer to include a primer sequence within the capture moiety in order to permit amplification of the template strand and to permit nested amplification." *See id.* Applicant respectfully traverses the rejection.

The statement of the bases for the rejection at pages 8 to 10 of the September Final Action appears to be essentially unchanged from the bases set forth in Paper No. 7. The Examiner contends that he already addressed applicant's prior arguments at page 13 of the September Final Action.

Applicant respectfully traverses the rejection. Contrary to the Examiner's assertion, he has not adequately addressed all of applicant's assertions and requests for clarification that have been presented to date. Applicant repeats, and adds to, the prior arguments in the Amendment submitted July 22, 2002, and requests that the Examiner carefully consider them and address them if the rejection is maintained. Applicant also incorporates by reference all of the prior arguments presented in the March 2002 Amendment. Applicant respectfully asserts that the Examiner also has not adequately addressed those arguments.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Independent claim 60 recites that "at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion." Claim 60 also recites a primer set.

Applicant now addresses the Examiner's contentions concerning applicant's arguments. The Examiner still fails to adequately explain the alleged teaching provided by the two applied documents that would have motivated one of ordinary skill in the art to change the probe of Barany PCT to arrive at the claimed invention.

The Examiner first contends that applicant improperly presented arguments against the references individually when the rejection was based on a combination of references. Final Action mailed April 22, 2002 ("April Final Action") at pages 12 to 13. The Examiner then contends that the motivation to modify the Barany PCT probes is "a motivation 'in order to permit amplification of the template strand within the primer in a PCR reaction.'" *Id.* at page 13.

The March 2002 Amendment properly addressed the combination and modification of the references proposed by the Examiner. In fact, the March 2002 Amendment directly addressed the Examiner's failure to establish that the combined documents would have motivated one skilled in the art to modify the probe of Barany PCT by changing the arrangement of the Barany PCT primer to include an addressable support-specific portion between a primer-specific portion and a target-specific portion.[2]

The Examiner contends that the motivation to modify the Barany PCT probes was an alleged motivation to "permit amplification of the template strand within the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

[2] It is not clear what particular assertions in the March 2002 Amendment the Examiner considered to be attacks on individual documents. If this basis for the rejection is maintained, applicant would appreciate a more specific statement on this point. In the March 2002 Amendment, applicants disagreed with the some of the Examiner's allegations concerning certain individual teachings. See that amendment, e.g., at page 23, first full paragraph, and the paragraph bridging pages 23 and 24.

primer in a PCR reaction." April Final Action at page 12. The Examiner, however, still fails to explain where the motivation would have arisen to amplify the ligation product in Barany PCT.

As discussed in the March 2002 Amendment, Barany PCT fails to discuss amplification of the ligation products that include the ligated probe with an addressable sequence. Thus, the Examiner still fails to establish why there would have been any motivation on the part of one skilled in the art to reach to Boyce-Jacino for a teaching about amplification primers for amplifying such ligation products. The Examiner simply fails to explain why one skilled in the art would have used the alleged "rearranged primer of Boyce-Jacino in the method of Barany . . ." when Barany PCT fails to discuss any method of amplifying the ligation product that includes an addressable sequence.

When the U.S. Patent and Trademark Office makes "core factual findings in a determination of patentability, . . ." the Office "must point to some concrete evidence in the record to support [such] findings." *In re Zurko*, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001). Moreover, the Office "cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies." *In re Lee*, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002).

Here, the Examiner provides neither concrete evidence on the record nor a suitable rationale why one of ordinary skill in the art would have been taught to use the alleged rearranged primer of Boyce-Jacino to amplify addressable sequences in the Barany PCT ligation product, when Barany PCT discusses no amplification of such ligation products. Moreover, the Examiner has not explained how Boyce-Jacino would have provided such motivation to modify the Barany PCT method. In fact, the Examiner still provides no evidence of record or rationale for his statement that the ordinary practitioner would have been motivated to modify the Barany PCT primer to include a

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

primer sequence within the capture moiety. The Examiner has pointed to no such motivation in either applied document. In fact, the Examiner points to no disclosure in Barany PCT of a primer, which is used for amplifying the addressable sequence, that could be modified.

The Examiner also disagreed with applicant's assertion that Boyce-Jacino fails to suggest a probe or primer that includes "a primer, capture, target binding arrangement." *See* April Final Action at page 13. Applicant continues to maintain that assertion for the reasons set forth in the March 2002 Amendment at pages 23 to 24. The Examiner's contentions fail to address those specific assertions. Rather, the comments focus solely on the primer region and the capture region.

Also, as discussed above, claims 120, 122, 124, 126, and 128 recite that the at least one probe set comprises at least two different probe sets for detecting at least two different target sequences. At least one probe in a first probe set comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of a first target sequence, and an addressable support-specific portion that is specific for the first target sequence. At least one probe in a second probe set comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence. The primer-specific portions of the probes have identical sequences.

Thus, the at least two probes comprise identical primer-specific sequences, but comprise (i) different addressable support-specific portions that are specific to the at least two different target sequences and (ii) different target-specific portions that hybridize to the at least two different target sequences.

Moreover, claims 121, 123, 125, 127, and 129 recite that the at least one probe set comprises at least six different probe sets for detecting at least six different target

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

sequences. At least one probe in each of the six different probe sets comprises a primer-specific portion, a target-specific portion that hybridizes to a portion of one of the at least six different target sequences, and an addressable support-specific portion that is specific for the one of the at least six different target sequences. The primer-specific portions of each of such probes of the at least six different probe sets have identical sequences.

The Examiner fails to provide a rationale or evidence why the two cited documents would have suggested the additional elements of claims 120 to 129, which are discussed in detail above.

Accordingly, the Examiner has failed to establish that the combination of Boyce-Jacino and Barany PCT would have motivated one of ordinary skill in the art to make the presently claimed kits of independent claims 60 and 120 to 129.

Thus, the Examiner has failed to establish that Barany PCT and Boyce-Jacino would have shown or suggested claim 60, and all claims dependent from claim 60, and claims 120 to 129. Thus, applicant need not address the Examiner's contentions concerning other limitations of those claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the § 103 rejections of certain claims in view of Barany PCT and Boyce-Jacino.

Rejection In View of Barany PCT and Boyce-Jacino and Xu

The Examiner also rejected several claims under 35 U.S.C. § 103(a) as allegedly being unpatentable over Barany PCT, in view of Boyce-Jacino, and further in view of Xu et al., Tetrahedron Lett., 38(32):5595-5598 (1997) (Xu). *See* September Final Action at page 11. The Examiner cited Barany PCT and Boyce-Jacino for the reasons discussed

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

in the prior rejection and stated that Barany PCT and Boyce-Jacino did not teach use of tosylated or iodate oligonucleotides for ligation. *See id.* (Certain dependent claims specifically recite that "the 5' thymidine leaving group is tosylate or iodide.") The Examiner contended that Xu discussed tosylated and iodate oligonucleotides for ligation. *See id.* Applicant respectfully traverses.

All of the dependent claims that specifically recite that "the 5' thymidine leaving group is tosylate or iodide" ultimately depend from claim 60. Thus, all of those dependent claims include all of limitations of claim 60. Above, applicant explained why the Examiner failed to establish that Barany PCT and Boyce-Jacino would have suggested independent claim 60. Xu would have failed to remedy those deficiencies of Barany PCT and Boyce-Jacino.

Thus, the Examiner has failed to establish that the combination of Barany PCT, Boyce-Jacino, and Xu would have rendered obvious any of the rejected claims. Moreover, applicant need not address the Examiner's contentions concerning the combination of Barany PCT, Boyce-Jacino, and Xu with respect to other limitations of certain rejected claims. By not addressing those contentions, applicant in no way acquiesces to those contentions.

Applicant respectfully requests reconsideration and withdrawal of the § 103 rejections of certain claims in view of Barany PCT, Boyce-Jacino, and Xu.

Conclusion

Applicant respectfully asserts that the application is in condition for allowance and requests issuance of a Notice of Allowance. If the Examiner does not consider the application to be in condition for allowance, applicant requests that he call the undersigned at (650) 849-6620 to set up an interview.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: December 11, 2002

By: _____
M. Paul Barker
Reg. No. 32,013

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Appendix to Amendment After Final (December 11, 2002)

55. (Amended) A kit according to claim [54] 62, wherein the polymerase is a thermostable polymerase.

57. (Amended) A kit according to claim [52] 130, wherein the ligation agent is a ligase.

60. (Amended) A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, each probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion; and

a primer set, the primer set comprising (i) at least one primer comprising the sequence of the 5' primer-specific portion of the first probe, and (ii) at least one primer complementary to the 3' primer-specific portion of the second probe.

61. (Amended) A kit according to claim 60, further comprising a support, the support comprising a capture oligonucleotide[s] capable of hybridizing with the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

addressable support-specific portion of the at least one probe or with a sequence[s] complementary to the addressable support-specific portion[s] of the at least one probe.

62. (Amended) A kit according to claim 60, further comprising [a primer set, the primer set comprising (i) at least one primer comprising the sequence of the 5' primer-specific portion of the first probe, and (ii) at least one primer complementary to the 3' primer-specific portion of the second probe,] a polymerase, and wherein at least one primer of the primer set further comprises a reporter group[; and a polymerase].

120. (Amended) [The kit of claim 52,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each probe set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a first target sequence, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, and a 3' primer-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of the first and second probe sets have identical sequences.

121. (Amended) [The kit of claim 52,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each probe set are

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of each of the at least six different probe sets have identical sequences.

122. (Amended) [The kit of claim 52,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

portion and a 3' primer-specific portion, wherein the probes in each probe set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

and wherein the 3' primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

123. (Amended) [The kit of claim 52,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each probe set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

sequences, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.

124. (Amended) [The kit of claim 60,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, each probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a first target sequence, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, and a 3' primer-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of the first and second probe sets have identical sequences.

125. (Amended) [The kit of claim 60,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, each probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of each of the at least six different probe sets have identical sequences.

126. (Amended) [The kit of claim 60,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, each probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

127. (Amended) [The kit of claim 60,] A kit for detecting at least one target sequence in a sample comprising:

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

at least one probe set for each target sequence to be detected, each probe set comprising (a) at least one first probe, comprising a target-specific portion and a 5' primer-specific portion, and (b) at least one second probe, comprising a target-specific portion and a 3' primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

128. (Amended) [The kit of claim 71,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and (b) at least one second probe, comprising a target-specific portion and a primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one second probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

portion of the second target sequence, a primer-specific portion, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

and wherein the primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

129. (Amended) [The kit of claim 71,] A kit for detecting at least one target sequence in a sample comprising:

at least one probe set for each target sequence to be detected, the probe set comprising (a) at least one first probe, comprising a target-specific portion and (b) at least one second probe, comprising a target-specific portion and a primer-specific portion, wherein the probes in each set are suitable for ligation together when hybridized adjacent to one another on a complementary target sequence, and wherein at least one second probe in each probe set further comprises an addressable support-specific portion located between the primer-specific portion and the target-specific portion;

wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

hybridizes to a second portion of the one of the at least six different target sequences, a primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

and wherein the primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com